

## Metrics:

- Bases: SI measurements
  - kilograms (kg) → mass
  - meters (m) → length/width/  
height/distance
  - liters (L) → volume
  - seconds (s) → time
  - Kelvin (K) → temperature
  - mole (mol) → amount
  - Ampere (A) → current
  - Candela (cd) → light intensity

- Prefixes: (largest to smallest)
  - kilo (k)  $\rightarrow 1 \text{ km} = 1000 \text{ m}$
  - hecto (h)  $\rightarrow 1 \text{ hL} = 100 \text{ L}$
  - deca (da)  $\rightarrow 1 \text{ dag} = 10 \text{ g}$
  - BASE
  - deci (d)  $\rightarrow 1 \text{ dm} = \frac{1}{10} \text{ m}^{(0.1)}$
  - centi (c)  $\rightarrow 1 \text{ cL} = \frac{1}{100} \text{ L}^{(0.01)}$
  - milli (m)  $\rightarrow 1 \text{ mg} = \frac{1}{1000} \text{ g}^{(0.001)}$

- Again, in order largest to smallest:

kilo hecto deca base deci centi milli  
1000 100 10 1  $\frac{1}{10}$   $\frac{1}{100}$   $\frac{1}{1000}$

King Henry died by drinking chocolate milk.

• Converting Units:

1. Figure out where you are starting and where you are going.
  2. Find the decimal and move in the same way.
- If you move to the right (from larger to smaller), then you also move the decimal to the right.
  - If you move to the left (smaller to larger), then you also move the decimal to the left.

Example:  $0.001 \text{ m} \rightarrow 0.001 \text{ km}$

$$1.000 \text{ km} = 1000 \text{ m}$$

• More examples:

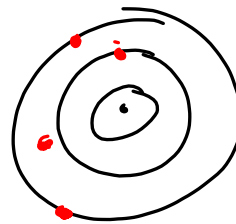
$$\underline{0.1} \text{ m} = \underline{.01} \text{ km}$$

$$2.5 \underline{\text{ kg}} = \underline{2500} \text{ g}$$

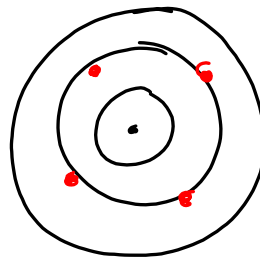
$$\underline{17.504} \text{ dL} = \underline{0.17504} \text{ daL}$$

- Precision → measure of the degree to which measurements made in the same way agree with each other
- Accuracy → degree to which experimental value agrees with true or accepted value

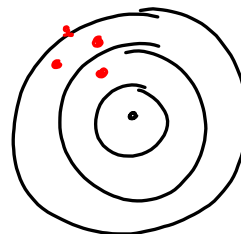
Not Accurate  
NOT Precise



Accurate  
NOT precise



NOT Accurate  
Precise



Accurate  
Precise

